BEST AVAILABLE IMAGES

Defective images within this document are accurate representations of the original documents submitted by the applicant.

Defects in the images may include (but are not limited to):

- BLACK BORDERS
- TEXT CUT OFF AT TOP, BOTTOM OR SIDES
- FADED TEXT
- ILLEGIBLE TEXT
- SKEWED/SLANTED IMAGES
- COLORED PHOTOS
- BLACK OR VERY BLACK AND WHITE DARK PHOTOS
- GRAY SCALE DOCUMENTS

IMAGES ARE BEST AVAILABLE COPY.

As rescanning documents *will not* correct images, please do not report the images to the Image Problem Mailbox.

[19] Patent Office of the People's Republic of China

[51] Int. Cl[6]
A61K 7/16

[12] PUBLIC DESCRIPTION OF INVENTION PATENT APPLICATION

[21] Application No. 97106558.6

[43] Date of Publication:
4 March 1998

[11] Publication No.
CN 1174700A

[22] Date of Application: 14.8.97	[74] Patent agency: Shanghai No. 2 Patent Office
[71] Applicant: Li Wenxian Address: Room 401, Lane 48, 51 Shuicheng South Road, Shanghai 201103	Agent: Wu Ganquan
[72] Inventor: Li Wenxian	Claims: 1 page, Description: 4 pages, Appended Figures: 0 pages

[54] Title of Invention: Preparation for cleaning and disinfecting teeth and method for its manufacture

[57] Abstract

This invention concerns a preparation for cleaning and disinfecting teeth and a method for its manufacture, composed of such raw materials as water, bactericides, surfactants and silicon oil, characterized by a water content of 10% - 90%, 95% ethanol content of 1 - 75%, 35% hydrogen peroxide content of 0.5 - 27%, active material 32% K12 (liquid or powder) content of 0.2 - 20%, active material 70% MES content of 0.5 - 20%, active material 70% BS-12 content of 0.5 - 20%, active material 70% [AES] content of 0.5 - 20%, silicon oil content of 0.1% - 15%, xylitol content of 0.1 - 20%, urea content of 0.1 - 10%, clove oil content of 0.05 - 5%, borneol content of 0.01 - 5%, menthol content of 0.001 - 5%, stabilizer content of 0.01 - 2%, essence content of 0.001 - 2%, and colouring content of 0.00001 - 1%, the method for its manufacture being

to mix and agitate the above-mentioned raw materials in certain proportions.

(BJ) 1456

Claims

1. Preparation for cleaning and disinfecting teeth, including such raw materials as water, bactericides, surfactants, silicon oil, pharmaceutical additives, sweetener, stabilizer, colouring and essence, characterized by a water content of 10% - 90%, 95% ethanol content of 1 - 75%, 35% hydrogen peroxide content of 0.5 - 27%, active material 32% K12 (liquid or powder) content of 0.2 - 20%, active material 70% MES content of 0.5 - 20%, active material 70% BS-12 content of 0.5 - 20%, active material 70% AES content of 0.5 - 20%, silicon oil content of 0.1% - 15%, xylitol content of 0.1 - 20%, urea content of 0.1 - 10%, clove oil content of 0.05 - 5%, borneol content of 0.01 - 5%, menthol content of 0.001 - 5%, stabilizer content of 0.01 - 2%, essence content of 0.001 - 2%, and colouring content of 0.00001 - 1%.

2. Preparation for cleaning and disinfecting teeth according to Claim 1, characterized by an optimum water content of 55%, optimum 95% ethanol content of 20%, optimum 35% hydrogen peroxide content of 4%, optimum active material 32% K12 (liquid) content of 6%, optimum active material 70% MES content of 2%, optimum active material 70% BS-12 content of 2%, optimum active material 70% AES content of 2%, optimum silicon oil content of 3%, optimum xylitol content of 3%, optimum urea content of 1%, optimum clove oil content of 0.5%, optimum borneol content of 0.5%, optimum menthol content of 0.02%, optimum stabilizer content of 0.1%, optimum essence content of 0.1%, and optimum colouring content of 0.0001%.

3. Method for manufacturing a preparation for cleaning and disinfecting teeth according to Claim 1, characterized by placing the above-mentioned constituents of water, 95% ethanol, 35% hydrogen peroxide, active materials 32% K12, 70% MES, 70% BS-12 and 70% AES, silicon oil, xylitol, urea, clove oil, borneol, menthol, stabilizer, essence and colouring together and mixing by agitation at a slow agitation speed of

less than 120 rpm for a time of 15 - 20 minutes, after which the finished product is bottled.

Description

Preparation for Cleaning and Disinfecting Teeth and Method for its Manufacture

This invention concerns a preparation for cleaning and disinfecting teeth and a method for its manufacture.

The toothpaste currently used for cleaning teeth is all in the form of a paste packed in tubes, and its main constituents are in all cases surfactants, abrasives, adhesives, anti-drying agents, sweeteners, essences and an appropriate quantity of pharmaceutical additives. They also all have fairly good dirt removal and teeth cleaning efficacy, and some have pharmaceutical ingredients added which also have a certain preventive action against dental disease. However, traditional toothpastes also possess many inadequacies, and they cannot be adapted to the consumer demands of contemporary society, their main inadequacies appearing as: 1. As the disinfecting ingredient content is limited in ordinary toothpaste, and the contact time between the toothpaste and the toothbrush is also very short, the disinfecting constituents in traditional toothpaste are unable to destroy the bacteria on the toothbrush, and the large-scale multiplication of all kinds of bacteria on the toothbrush constitutes a direct route to viral infection and repeated harmful bacterial infection, and not treating a toothbrush in use with a disinfectant is a very dangerous omission. 2. Traditional toothpaste usually contains approximately 50% of calcium carbonate or calcium hydrogen phosphate abrasives, and although these mineral powders are in the form of very fine particles, long-term use inevitably has a wearing action on the enamel of the tooth surface, and a worn enamel layer cannot regrow. Teeth with a damaged enamel layer will show pathological changes and decay through having lost their protection, and so using abrasives is beneficial in removing dirt from teeth and increasing whiteness, but it also causes certain damage to the teeth at the same time. As people's

lifestyles cannot be unified, the length of time for which different people brush their teeth, the method of brushing the teeth and the amount of vigour used cannot constitute anything approaching a completely scientific method, and for a considerable proportion of people it is perfunctory. Thus, even though some toothpastes contain anti-caries and dental disease prevention medication, as the retention time of the active ingredients of the medication in the mouth is too short, the medication is unable properly to achieve its bactericidal and disease prevention results, and the user will feel that it has no significant action. The results on removal of tobacco stains and tea stains from the teeth and whitening of the teeth will all be insignificant.

The objective of this invention is to overcome the above-mentioned deficiencies and provide a new preparation for cleaning and disinfecting teeth and a method for its manufacture, this preparation for cleaning and disinfecting teeth effectively eliminating residual white matter and dirt on teeth and also being capable of destroying bacteria in the mouth and avoiding the production of bacteria among the bristles of the toothbrush. This achieves the objectives of preventing disease where there is no disease, preventing its spread where there is disease and preventing repeated infection, enabling people using the preparation for cleaning and disinfecting teeth genuinely to be able to achieve clean teeth and preserve oral hygiene.

The objective of this invention is realized through the following method: the preparation for cleaning and disinfecting teeth of this invention principally contains the following pharmaceutical raw materials: such constituents as water, bactericides, surfactants, silicon oil, pharmaceutical additives, stabilizer, colouring and essence mixed in certain proportions. Of these: the water can be any kind of filtered water, deionized water or distilled water. The bactericides are food grade ethanol and hydrogen peroxide, both of these raw materials being colourless and transparent disinfecting and bactericidal products with no toxic side-effects on the

human body, and with the two used in combination the results are extremely good. At the same time, hydrogen peroxide is a bleaching agent and after being used in combination with ethanol can very well remove bacterial plaque, tobacco stains and tea stains from teeth and restore their whiteness, while the combined action of ethanol with the surfactants can also strengthen the solvation and emulsification of dirt, thoroughly removing oily dirt from the teeth cavities. There are very many surfactants, and they are mainly selected for having no toxic side-effects on the human body when taken into the mouth, and for abundant foam and excellent solvation and emulsification performance with no objectionable taste. They are active materials with no deep colouring, such as BS-12, MES, AES, K12 and imidazoline. After the addition of silicon oil, brushing the teeth can give a smooth and comfortable feeling, and it can also form a good protective layer for the teeth and gums. Depending on requirements, emulsified silicon oil, water-soluble silicon oil, complex silicon oil or dimethyl silicon oil can be selected. The pharmaceutical additives include urea, clove oil, borneol, menthol and cuprocopiapite, these pharmaceutical materials having the functions of clearing heat, lowering fire, decoction, stopping bleeding, eliminating swelling, stopping pain and preventing mouth odours and mouth and tongue ulcers. At the same time, urea is also an excellent foam stabilizer, which can make the formed foam abundant, fine, smooth and long-lasting. The food additive xylitol is mainly used as the sweetener. This substance can adjust the product taste and has a definite bactericidal function. Because of the hydrogen peroxide, it is necessary to add a suitable amount of stabilizer, while the addition of various essences and colourings is mainly to satisfy consumer demands and increase the product appearance, and so these can be determined according to the actual situation.

The formulation of this invention is shown in Table 1 (percentages are expressed in terms of the weight of the preparation for cleaning and disinfecting teeth).

Table 1

Constituent	Amount used, %
Water	10 - 90
95% ethanol	1 - 75
35% hydrogen peroxide	0.5 - 27
32% K12 (liquid or powder)	0.2 - 20
70% MES	0.5 - 20
70% BS-12	0.5 - 20
70% AES	0.5 - 20
Silicon oil	0.1 - 15
Xylitol	0.1 - 20
Urea	0.1 - 10
Clove oil	0.05 - 5
Borneol	0.01 - 5
Menthol	0.001 - 5
Stabilizer	0.01 - 2
Essence	0.001 - 2
Colouring	0.00001 - 1

The preparation for cleaning and disinfecting teeth of this invention is made up according to the following method: the pharmaceutical raw materials are poured into a suitable container, namely 10 - 90% of water, 1 - 75% of 95% ethanol, 0.5 - 27% of 35% hydrogen peroxide, 0.2 - 20% of 32% K12 (liquid or powder), 0.5 - 20% of 70% MES, 0.5 - 20% of 70% BS-12, 0.5 - 20% of 70% AES, 0.1 - 15% of silicon oil, 0.1 - 20% of xylitol, 0.1 - 10% of urea, 0.05 - 5% of clove oil, 0.1 - 5% of borneol, 0.001 - 5% of menthol, 0.01 - 2% of stabilizer, 0.001 - 2% of essence and 0.00001 - 1% of colouring, and these are mixed by agitation. The agitation speed is slow at less than 120 rpm, and the time is 15 to 20 minutes, after which the finished product is bottled.

In comparison with the prior art, this invention changes the paste form of toothpaste into a clear and transparent liquid product, completely free of any abrasives, eliminating the side-effects of such products. After changing into a liquid it can be combined with a toothbrush to form a single

liquid it can be combined with a toothbrush to form a single entity ready for use, saving the trouble of always applying toothpaste to the toothbrush, thus bringing convenience. It can also effectively remove dirt and bacteria from the teeth and can also destroy the various pathogenic bacteria on the toothbrush, preserving the cleanliness of the toothbrush and preventing the occurrence of oral diseases.

A further detailed description of this invention is provided below through an actual formulation and practical example:

An optimum formulation for the preparation for cleaning and disinfecting teeth of this invention is shown in Table 2:

Table 2

Constituent	Amount used (%)
Water	55
95% ethanol	20
35% hydrogen peroxide	4
32% K12 (liquid or powder)	6
70% MES	2
70% BS-12	2
70% AES	2
Silicon oil	3
Xylitol	3
Urea	1
Clove oil	0.5
Borneol	0.5
Menthol	0.02
Stabilizer	0.1
Essence	0.1
Colouring	0.0001

The actual preparation method for this invention is as follows:, 55 kg of water, 20 kg of 95% ethanol, 4 kg of 35% hydrogen peroxide, 6 kg of 32% K12, 2 kg of 70% MES, 2 kg of 70% BS-12, 2 kg of 70% AES, 3 kg of silicon oil, 3 kg of

xylitol, 1 kg of urea, 0.5 kg of clove oil, 0.5 kg of borneol, 0.02 kg of menthol, 0.1 kg of stabilizer, 0.1 kg of essence and 0.001 kg of colouring are placed in a suitable container, and these are mixed by agitation. The agitation speed is slow at less than 120 rpm, and the time is 15 to 20 minutes. This yields approximately 100 kg of the product, which is then bottled.